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RAW SEQUENCE LISTING

DATE: 07/11/2001

PATENT APPLICATION: US/09/737,297

TIME: 11:32:29

Input Set : A:\09-213046 Sequence Listing.txt

Output Set: N:\CRF3\07112001\I737297.raw

ENTERED

5 <110> APPLICANT: Berry, Mark
 7 Griffiths, Allen
 9 Hill, Philip
 11 Laybourne-Parry, Johanna
 13 Mills, Sarah
 17 <120> TITLE OF INVENTION: Processes and Organisms for the Production of Antifreeze
 Proteins
 21 <130> FILE REFERENCE: F3247
 25 <140> CURRENT APPLICATION NUMBER: US 09/737,297
 27 <141> CURRENT FILING DATE: 2000-12-15
 31 <150> PRIOR APPLICATION NUMBER: GB 9929696.4
 33 <151> PRIOR FILING DATE: 1999-12-15
 37 <160> NUMBER OF SEQ ID NOS: 5
 41 <170> SOFTWARE: PatentIn version 3.0
 45 <210> SEQ ID NO: 1
 47 <211> LENGTH: 1486
 49 <212> TYPE: DNA
 51 <213> ORGANISM: Marinomonas protea
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 58 ggagcttgct cctgctgacg agcggcgagc gggtagtaga cgcgtaggaa tctgcctagt 120
 60 agaggggggac aacatgtgga aacgcacat aataccgcat acgcccagag ggggaaaggga 180
 62 ggggactctt cgagaccttc cgctattaga tgagcctgag tgagattagc tagttggtag 240
 64 ggtaaaggcc taccaaggcg acgatctcta actgggtcta gaggatgacc agtcacactg 300
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 70 tcagggggtga ggaagggtga taggttaata cgttatcatc ttgacgttag cccagaaga 480
 72 agcaccggct aactctgtgc cagcagccgc ggtaatacag aggggtgcaag cgtaaatcgg 540
 74 aattactggg cgtaaaagcgc gcgtaggtgg tttgttaagt cggatgtgaa atcccagggc 600
 76 tcaaccttgg aatggcaccg gatactggct agctagagta tggtagaggg gtgtggaatt 660
 78 tcctgtgtag cggtagaatg cgtagatata ggaaggaa caagtgccga aggcgacacc 720
 80 ctggactaat actgacactg aggtgcgaaa gcgtggggag caaacaggat tagataccct 780
 82 ggtagtccaac gccgtaaacg atgtctacta gccgttgggt tgtaatgact tagtgggcga 840
 84 gctaaccgca taagtagacc gcctggggag tacggccgca aggttaaac tcaaatgaat 900
 86 tgacgggggc cgcgcaaacg ggtggagcat gtggtttaat tcgaagcaac gcgaagaacc 960
 88 ttacctactc ttgacatcca cagaacattt gagagatcag atggtgcctt cggaactgt 1020
 90 gagacagggt ctgcattggt gtcgtcagct cgtgttgtga aatgttgggt taagtcccg 1080
 92 aacgagcgca acccttgtcc ttatttgcca gcacgtaagt gtgggaactt taaggagact 1140
 94 gccggtgaca aaccggaggga aggtggggac gacgtcaagt catcatggcc cttacgagta 1200
 96 gggctacaca cgtgctacaa tggcgatata agagggtgc aagctagcga tagtgagcga 1260
 98 atcccacaaa gtacgtcgta gtccggattg gagtctgcaa ctgcactcca tgaagtcgga 1320
 100 atcgctagta atcgtgaatc agaattgtcac ggtgaatacg ttcccgggcc ttgtacacac 1380
 102 cgcccgctac accatgggag ttgattgctc cagaagttag tagcttaacc cttcggggag 1440
 104 ggcgggttacc acgggattgt caatgactgg ggttgaagtc tacgag 1486
 107 <210> SEQ ID NO: 2
 109 <211> LENGTH: 1070
 111 <212> TYPE: DNA
 113 <213> ORGANISM: Pseudomonas (NCIMB 41076)

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117 <400> SEQUENCE: 2
118 gcccttgctc agattgaacg ctggcggcag gcctaacaca tgcaagtcca gcggtagaga      60
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122 gtgggggata acgttcggaa acggacgcta ataccgcata cgtcctacgg gagaaagcag      180
124 gggaccttcg ggccttgccg tatcagatga gcctaggtcg gattagctag ttggtgaggt      240
126 aatggctcac caaggcgacg atccgtaact ggtctgagag gatgatcagt cacactggaa      300
128 ctgagacacg gtccagactc ctacgggagg cagcagtggg gaattattga caatggcgca      360
130 aagcctgacg cagccatgcc gcgtgtgtga agaaggtctt cggattgtaa agcactttaa      420
132 gttggggagg agggttgtag attaatactc tgcaattttg acgttaccga cagaataagc      480
134 accggctaac tctgtgccag cagccgcggg aatacagagg gtgcaagcgt taatcggaa      540
136 tactgggcgt aaagcgcgcg taggtgtttt gttaagttag atgtgaaatc cccgggctca      600
138 acctgggaac tgcattcaaa actgactgac tagagtatgg tagagggtgg tggaaattcc      660
140 tgtgtagcgg tgaaatgcgt agatatagga aggaacacca gtggcgaagg cgaccacctg      720
142 gactaatact gacactgagg tgcgaaagcg tggggagcaa acaggattag ataccctggt      780
144 agtccacgcc gtaaacgatg tcaactagcc gttggaagcc ttgagctttt agtggcgagc      840
146 ctaacgcatt aagttgaccg cctggggagt acggccgcaa ggttaaaact caaatgaatt      900
148 gacggggggc cgcacaagcg gtggagcatg tggtttaatt cgaagcaacg cgaagaacct      960
150 taccaggcct tgacatccaa tgaactttct agagatagat tggtccttc gggaaacatt      1020
152 agacaggtgc tgcattgctg tcgtcagctc gtgtgtgtaa atgtaagggc      1070
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157 <211> LENGTH: 16
159 <212> TYPE: PRT
161 <213> ORGANISM: Marinomonas protea
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169 <222> LOCATION: (6)..(6)
171 <223> OTHER INFORMATION: residue 6 is G or V
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178 1 5 10 15
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182 <211> LENGTH: 1481
184 <212> TYPE: DNA
186 <213> ORGANISM: Marinomonas communis
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194 <222> LOCATION: (1)..(1)
196 <223> OTHER INFORMATION: base identity unsure
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224 <222> LOCATION: (964)..(965)

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242 <221> NAME/KEY: Unsure
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246 <223> OTHER INFORMATION: base identity unsure
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256 <223> OTHER INFORMATION: base identity unsure
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262 <221> NAME/KEY: Unsure
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266 <223> OTHER INFORMATION: base identity unsure
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273 agtcgagcgg taacattgct agcttgctag aagatgacga gcggcggacg ggtgagtaac 120
275 gcgtaggaaat ctgcctagta gtggggggaca acatgtggaa acgcatgcta ataccgcata 180
W--> 277 cgccctacgg gggaaaggag ggnntcttgc gacctttgcg tattagatga gcctgcgtga 240
279 gattagcttag ttggtggggt aaaggcctac caaggcgacg atctctagct ggtctgagag 300
281 gatgatcagc cacactggga ctgagacacg gccagactc ctacgggagg cagcagtggg 360
283 gaattattgga caatggggcg aagcctgctc cagccatgcc gcgtgtgtga agaaggcctt 420
285 agggttgtaa agcactttca ggagtggaga agggcgtata gttaataacct gtagtgtttg 480
287 acgttaactc cagaagaagc accgctaact tctgtgccag cagccgcggt aatacagagg 540
289 gtgcgagcgt taatcggaat tactgggcgt aaagcgcgcg taggcggttt gttaagtcgg 600
291 atgtgaaatc ccagggtctc accttgggat ggcacccgat actggcaggc tagagtacgg 660
293 tagagggggt tggaatttcc tgtgtagcgg tgaatgcgt agatatagga aggaacatca 720
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W--> 297 acaggattag ataccctggg agtccacgcc gtaaacgatg tctactagcc gttggggatn 840
299 tattttctta gtggcgacg taacgcgata agtagaccgc ctggggagta cggccgcaag 900
301 gttaaaactc aaatgaattg acggggggccc gcacaagcgg tggagcatgt ggtttaattc 960
W--> 303 gaannaacgc gaagaacctt acctactctt gacatccaga gaactttyca gagatgaatt 1020
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307 tgttgggtta agtcccgtaa cgagcgcaac cttatcctt atttgggagc acttcgggtg 1140
W--> 309 gnaactctaa ggagactgcc ggtgacaaac cggaggaagg tngnnncgac gtcaagtcac 1200
311 catggccctt acgagttagg ctacacacgt gctacaatgg cgtatacaga gggcagcgaa 1260
313 ctccgagggg taagcaaata ccaaaaagta cgtcgtagtc cggattggag tctgcaactc 1320
315 gactccatga agtcggaatc gctagtaatc gtgaatcaga atgtcacggt gaatacgttc 1380
317 ccgggccttg tacacacgc cgtcacacc attgggagttg attgctccag aagtagctag 1440
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326 <212> TYPE: DNA
328 <213> ORGANISM: Pseudomonas synxantha
332 <400> SEQUENCE: 5
333 agagtttgat cttggctcag attgaacgct ggcggcaggc ctaacacatg caagtgcagg 60

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335	ggtagagaga	agcttgcttc	tcttgagagc	ggcggacggg	tgagtaatgc	ctaggaatct	120
337	gcctggtagt	gggggataac	gttcggaaac	ggacgctaata	accgcatacg	tcctacggga	180
339	gaaagcaggg	gaccttcggg	ccttgcgcta	tcagatgagc	ctaggtcgga	ttagctagtt	240
341	ggtgaggtaa	tggctcacca	aggcgacgat	ccgtaactgg	tctgagagga	tgatcagtca	300
343	cactggaact	gagacacggt	ccagactcct	acgggaggca	gcagtgggga	atattggaca	360
345	atgggcgaaa	gcctgatcca	gccatgccgc	gtgtgtgaag	aaggctcttcg	gattgtaaag	420
347	cactttaagt	tgggaggaag	ggttgtagat	taatactctg	caattttgac	gttaccgaca	480
349	gaataagcac	cggctaactc	tgtgccagca	gccgcggtaa	tacagagggt	gcaagcgtaa	540
351	atcggaatta	ctgggcgtaa	agcgcgcgta	ggtggtttgt	taagttggat	gtgaaatccc	600
353	cgggctcaac	ctgggaactg	cattcaaaac	tgactgacta	gagtatggta	gaggggtggg	660
355	gaatttcctg	tgtagcggtg	aaatgcgtag	atataggaag	gaacaccagt	ggcgaaggcg	720
357	accacctgga	ctaatactga	cactgaggtg	cgaagcgtg	gggagcaaac	aggattagat	780
359	accctggtag	tccacgccgt	aaacgatgtc	aactagccgt	tggaagccct	gagcttttag	840
361	tggcgcagct	aacgcattaa	gttgaccgcc	tggggagtac	ggccgcaagg	ttaaaactca	900
363	aatgaattga	cgggggcccc	cacaagcggg	ggagcatgtg	gtttaattcg	aagcaacgcg	960
365	aagaacctta	ccaggccttg	acatccaatg	aactttctag	agatagattg	gtgccttcgg	1020
367	gaacattgag	acaggtgctg	catggctgtc	gtcagctcgt	gtcgtgagat	gttgggttaa	1080
369	gtcccgtaac	gagcgcaacc	cttgctccta	gttaccagca	cgtaaatggtg	ggcactctaa	1140

VERIFICATION SUMMARY

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Input Set : A:\09-213046 Sequence Listing.txt

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L:177 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:271 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:277 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:297 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:303 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:309 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:319 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4